B-1B inspection team wins Silver Eagle Award

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TINKER AIR FORCE BASE, Okla. (AFMCNS) – Reducing B-1B aircraft turn time from 70 days to 20 and saving about $65 million during the next seven years has earned the B-1B TaperLok Inspection Team here the Boeing Silver Eagle Award.

The Silver Eagle Awards recognize teams for providing customers with products and services of the highest quality and lowest possible cost, striving for continuous improvement and exemplifying quality values. The awards are given annually to approximately 20 teams from a nomination pool of more than 150.

Nominated teams are evaluated on whether their achievement reflects excellence in quality and innovation, their systems or processes change as a result of their achievement and whether they serve as a role model and satisfy the customer. The awards were presented during a special ceremony April 20 at the Disneyland Hotel Ballroom in Long Beach, Calif.

Judges for this year's Silver Eagle Award said the B-1B TaperLok Inspection Team's efforts, "made a positive difference in the B-1's mission-capable numbers."

Until recently, no process, procedure or technique existed for inspecting the large, high interface TaperLok fasteners, said Craig Helbert, a Boeing chief engineer. Removing the fasteners for inspections had never been done, because workers believed the process could cause supplemental damage to the aircraft. It was also estimated to cost $800,000 per aircraft.

In his award nomination letter, Helberg identified two critical areas that would require near term inspections - the TaperLok fastener holes in the wing carry through (aircraft's belly) and TaperLok fasteners at the wing splice joint.

To help with the problem, Helberg said the team developed a non-destructible inspection technique that could detect small cracks emanating from the bolt holes in the middle of up to four layers of material. The team also developed a process

and tools to perform a conventional inspection and refined the structural analysis with the goal of postponing the inspection and reducing the number of fasteners needed to be inspected.

Team engineers used some of the newest analytic modeling techniques and reduced the number of fasteners that had to be inspected from roughly 280 per aircraft to 24, he said.

This non-destructive inspection development, hole rework improvements and cumulative gains in analysis reduced turn time from 70 days to 20 days and is expected to save about $65 million over the next seven years, the judges said.

Team members from the Oklahoma City Air Logistics Center include Deana Allen, Richard Beauchamp, Michael Davis, Gavin Evans, Cliff Hendricks, James Henry, Jim Milburn, Melvin Roberson, Tommy Smallwood, Larry Tabor, Jeff Teoli, Steve Tipton, Steve West and Raymond Wood.

"This has been a very cohesive team," said Allen, program manager for Tinker's Aircraft Structural Integrity Program. "Everyone has worked really well together. This was a big effort."

Evans, B-1B ASIP engineer, said, "I'm extremely proud of this project. I'm delighted to show this off to contractors, representatives of Boeing and the Air Force, because I think it's a great example of several entities coming together to accomplish a common goal.

"One of the most valuable lessons we learned was bringing the mechanics in early on in the process."

"Our Air Force customer is extremely happy with the results produced by the TaperLok Inspection Team," Helberg said. "They were faced with the immediate dilemma of having to either start grounding aircraft or expending significant sums of money to continue the operation of the fleet.

"The inspection requirements for many of the TaperLoks have been deferred far into the future, while at the same time, a non-intrusive ultrasonic technique will allow them to move forward with the required inspections at significantly reduced cost and schedule."

CUTLINE:
Air Force photo by Margo Wright
B-1 structural mechanics Richard Beauchamp, left, and Jeff Teoli, work under a bomber's wing to remove old fasteners, clean the opening and check existing tolerances in the fasteners' openings.

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